TEXTRON

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To William McKenna

From K.P. England KPE

Location Randall
Cincinnati, OH

Date May 15, 1989

Subject: Draft Randall Grenada Audit Report

As I discussed with you in our phone conversation on 5/15/89, here is a copy of the Draft audit report for technical and factual review. Please limit distribution, as this is a draft document only and respond in writing with any technical changes by 5/24/89.

Also, please supply a list of individuals who will require final copies, bearing in mind that we would like to keep this document as restricted as possible.

KPE/smm

Attachment

cc: R.A. McWhirter (w/out attachment)
P.B. Duff (w/out attachment)
Mark Williams (with attachment) Randall - Grenada, MS ✓

File: Randall - Grenada, MS

DRAFT

Environmental Audit Report
for
The Textron Randall Plant

Grenada, Mississippi

Audit Conducted: April 13 and 14, 1989

Submitted to:

Textron Inc.
40 Westminster Street
Providence, Rhode Island 02903

Submitted by:

Environmental Resources Management, Inc.
855 Springdale Drive
Exton , Pennsylvania 19341

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Introduction

Textron Inc. retained Environmental Resources Management, Inc. (ERM) to conduct an environmental audit of the Textron Randall Plant located in Grenada, Mississippi. The primary objectives of the audit were as follows:

1) Identify environmental regulatory compliance issues,

2) Identify environmental liability issues, and

3) Determine the extent that plant operations are conducted in accordance with good environmental management practices.

Prior to conducting the audit, the ERM audit team reviewed available federal and state environmental regulations potentially applicable to the plant. The audit team also reviewed documents furnished by Textron that provided information on general plant operations, environmental submittals made by the plant, and various environmentally related matters involving the plant.

The audit was conducted during April 13 and 14, 1989 by an ERM team consisting of two professionals having considerable experience in conducting environmental audits of large industrial facilities. The audit began with a project initiation meeting. During the project initiation meeting, the audit team met with designated individuals from the plant to review the general plant operations, discuss the objectives of the audit, and to review the type of information that the audit team would need to examine during the course of the audit. Once oriented to the overall plant configuration and the type of operations conducted at the plant, the audit team then conducted a comprehensive tour of both the indoor manufacturing facilities and the outdoor areas of the plant. Once the tour was completed, the audit team then spent the remaining time reviewing plant environmental files and meeting with individuals at the plant to obtain further information on plant practices and regulatory matters. In assembling this information, the audit team made use of a comprehensive environmental questionnaire that was jointly prepared by Textron and ERM. The completed questionnaire is intended to accompany and supplement this report.

During the audit, the ERM audit team was hosted by Messrs. Frank Logan, Plant Manager; William McKenna, Divisional Environmental Coordinator; Mark Williams, Plant Chemist; Sayles Martin, Plant Engineer; and Chet Melton, Safety Director. Mr. Kevin England of Textron Corporate Environmental Affairs also attended the audit and

assisted ERM in assembling portions of the information. All of these individuals provided the ERM audit team with valuable assistance throughout the course of this effort.

The audit findings presented in this report are arranged according to general environmental topics, e.g., air, wastewater, hazardous waste, etc. Under each topic, the findings are separately discussed as either regulatory issues, liability issues, or management considerations.

1.0 Facility Profile

General Physical Setting

The Textron Randall Plant (hereinafter, the "plant") is located on State Highway 332 in Grenada, Mississippi. The plant is located in a rural area on the outskirts of town. Most of the land in the vicinity of the plant is either undeveloped or used for agriculture. There is one large industrial neighbor (unidentified at the time of the audit) located several hundred yards to the northeast.

The plant property occupies land on both the east and west sides of Highway 332. The main portion of the property, where the actual manufacturing facilities are located, is situated on the east side of Highway 332. Directly across the street, on the west side of the highway, is a parcel of land on which is situated part of the plant`s wastewater treatment facility and an inactive landfill formerly used by the plant. Adjacent to this part of the property is municipal land that is used as an occasional park and little league field.

The total plant property covers 56 acres. Most of the manufacturing is conducted in a 231,000 square feet main plant building. Some manufacturing operations are also conducted in an adjacent 12,500 square foot building. There is also a 28,800 square foot finished goods warehouse, as well as several smaller structures on the plant property.

There are two active lagoons on the plant property that are part of the plant`s wastewater treatment system. One lagoon is located near the main plant building and occupies an area of roughly 3 acres. It is used as a wastewater holding or equalization basin. The other lagoon is located on the western portion of the plant property. It is slightly smaller than the former lagoon and is used for the settling and accumulation of wastewater treatment sludge. To the west and south of the sludge lagoon is a former landfill that was used by the plant for the disposal of various manufacturing wastes. Its total area is not well defined, but it appears to occupy several acres.

The topography in the general vicinity of the plant is flat and low-lying, with some of the surrounding area being swampy in places. The aforementioned inactive landfill lies within one of these swampy areas.

A large drainage ditch runs near the southern end of the main plant property. Along the northern end of the western part of the property is a small stream known as Riverdale Creek. This stream receives all of the plant`s treated wastewater and eventally discharges into the Yalobusha River. The Yalobusha River is not believed to serve as a

potable water supply but does has some recreational uses.

The plant (and most of the surrounding area) obtains its water from wells. While the water table in the area is very near the surface, the plant`s wells tap into a deeper aquifer that is over two hundred feet deep.

Site History

The plant was built in 1960 on what is believed to have been either undeveloped land or agricultural land. According to individuals at the plant, there were no prior industrial activities on the plant property. Without going into actual property records, ERM is of the opinion that this statement is probably accurate due to the rural setting and general lack of older industrial facilities in the vicinity of the plant.

From the time it went into operation, the plant had always been engaged in the manufacture of automotive wheel covers, hubcaps, and trim rings. According to individuals at the plant, all of the manufacturing had always taken place in the existing main plant building and its smaller adjacent building. While there are outdoor chemical storage areas at various locations on the plant property, all of the manufacturing operations have always been conducted indoors. The fundamental nature of the manufacturing operations has not significantly changed since the plant went into operation. There are no abandoned buildings on the plant property.

The exact age of the wastewater treatment system is unclear. However, the plant believes there is about a twelve-year accumulation of wastewater treatment sludge in the sludge lagoon. This suggests that the wastewater treatment system probably went into operation sometime in the mid-1970s, a time frame that coincides with the implementation of more stringent effluent limitations under the NPDES program. If indeed the current wastewater treatment system only went into operation in the early to mid-1970s, then for at least a ten-year period the plant probably had been discharging either untreated or partially treated wastewater to Riverdale Creek.

According to documents filed by the plant with the USEPA, the now inactive landfill is believed to have been in operation from approximately 1961 to 1967. In any event, the landfill had ceased operation long before the Randall plant was acquired by Textron from Rockwell International in 1985.

From an environmental liability perspective, the most troublesome aspect of the plant`s history is the operation of the former landfill, particularly with respect to the type and amount of waste that was

disposed in it. Other than that, the history of the plant is fairly short and uncomplicated.

Manufacturing and Ancillary Operations

The principal manufacturing operations at the plant consist of metal pressing, buffing, chrome plating, painting, and component assembly. In the pressing operation, stainless steel sheet is pressed between dies to form the desired shapes of the hubcaps, etc. An oil-based "draw compound" is used as a lubricant in the pressing. The freshly pressed parts are then cleaned of the draw compound in a heated alkaline detergent bath prior to being conveyed to the buffing operation. The buffing operation is used to polish the surface of the parts with abrasives in paste form. After the buffing, the parts are again washed in a heated alkaline detergent bath and then conveyed to the chrome plating operation.

The chrome plating operation consists of several parallel plating lines, each of which consists of a series of heated baths. The actual electroplating takes place in a bath containing a chromic acid solution. After the parts are plated, they are washed in a series of rinse steps which generate a chromium containing wastewater stream. The plating operation also includes a chromic acid recovery system.

Some of the freshly plated hubcaps are painted. The painting operation employs solvent-based (mostly toluene) paints which are applied using a masking device. The masking device must be periodically cleaned in a trichloroethylene (TCE) bath. Most of the TCE evaporates and is discharged as air emissions. The remaining spent TCE is recovered in a small distillation unit located near the painting area. TCE still bottoms are periodically removed for off-site disposal.

After assembly of the various components, the finished parts are stored in an on-site warehouse prior to shipment to the customer.

Production chemicals are stored in both indoor and outdoor locations. TCE is stored in a outdoor aboveground tank. Certain drummed chemicals are stored on racks in an outdoor location. Most of the remaining production chemicals are stored indoors.

Waste oil, chiefly consisting of hydraulic oil and draw compound, is stored outdoors, both in an aboveground tank and in drums. The oil is periodically removed by a waste oil hauler. Drummed hazardous waste, usually consisting of TCE still bottoms and certain residues from the plating operation, are stored in an outdoor location.

The plant generates a considerable amount of scrap steel which is accumulated in several outdoor locations for periodic pick-up by a scrap dealer. Plant trash consisting of paper and wood is burned in an on-site trash incinerator. Other plant trash and several non-hazardous waste streams are collected in dumpsters for removal by waste haulers for disposal at the local landfill.

Wastewater from the plating operation is first subjected to a chromium reduction step using sulfur dioxide and then discharged to a holding lagoon adjacent to the main plant building. The holding lagoon serves as an equalization basin and also receives wastewater from other operations within the plant, such as the previously described washing steps. The combined wastewater is pumped from the holding lagoon to the remaining part of the wastewater treatment system located in the western part of the plant property. There, it is subject to precipitation and settling in a clarifier using lime and coagulants. The treated water is discharged to Riverdale Creek, and sludge from the clarifier is pumped into the adjacent sludge lagoon.

Process and space heat is supplied by four gas-fired boilers. Water for the plant is supplied by three on-site wells located in the eastern part of the plant property. Sanitary waste from the plant is discharged into a connection to the municipal sewer system.

2.0 Wastewater Discharge

Regulatory Issues

1) Ability to Meet More Stringent Limits of the New Permit

The effluent from the plant`s wastewater treatment system is discharged through a single outfall that is regulated by an NPDES permit issued by the Mississippi Department of Natural Resources (MDNR). The original permit expired on December 31, 1986. Subsequent to a reapplication by the plant, the MDNR finally issued a revised permit on February 14, 1989.

The new permit contains two sets of permit limitations. The first set of limitations largely reflects the old permit and is applicable to the plant now. The second set of limitations is more stringent and must be complied with in accordance with a compliance schedule to be submitted by the plant within 90 days of the permit issuance or by February 4, 1992, at the very latest. The second set contains mass and concentration limitations on total chromium, hexavalent chromium, total suspended solids, copper, silver, cadmium, lead, zinc, nickel, oil & grease, and total toxic organics. A review of the monthly Discharge Monitoring Reports for 1988 indicates that the plant was able to consistently meet the former set of limitations but not the more

stringent latter set. The data indicate that if the latter set of limitations were applied to the plant in 1988, the plant would have been out of compliance five out of the twelve months for the daily average mass limitation on total chromium and out of compliance one month for the daily average and daily maximum mass limitations on oil & grease.

The plant has not yet submitted a compliance schedule for meeting the more stringent limitations. However, it is probably safe to assume that the MDNR is not going to accept a compliance schedule that defers compliance till the latest possible1992 date. Therefore, the plant must be prepared to substantially improve the performance of the wastewater treatment system in the near future.

2) Inability to Pass Chronic Bioassay Test

The above permit also contains a quarterly bioassay monitoriing requirement. If the bioassay indicates chronic toxicity, the plant is considered in violation of the permit and must then submit a Toxicity Reduction Plan. The plant conducted four bioassay tests in 1988 and failed three out of the four tests. It subsequently submitted a Toxicity Reduction Plan which suggested a number of reasons for the toxicty but really did not propose a specific plan of corrective action.

Up till now, the bioassay tests were conducted with 50% effluent and 50% upstream water. Recently, the plant has been granted permission from the MDNR to increase the dilution to 35% effluent and 65% upstream water. This increased dilution should improve the plant`s chances of passing the bioassay tests, but it remains to be seen whether it will be enough to consistently achieve compliance with the bioassay requirement. If it is not, then some form of action will eventually have to be taken to reduce the toxicity of the effluent. This can only be done after the specific cause of the toxicity is pinpointed.

Liability Issues

Potential for Ground Water Contamination from Lagoons

The plant`s wastewater treatment system includes two lagoons: the wastewater equalization lagoon near the main plant building and the sludge accumulation lagoon at the western part of the plant property. Neither lagoon is equipped with a synthetic liner. While the lagoons are believed to be lined with clay, no information was available to ERM during the audit as to the thickness, continuity, or permeability of the clay liner. Therefore, the possibility of chrome containing wastewater infiltrating through the lagoon and into the underlying ground water is a legitimate concern until demonstrated otherwise. The presence of

water supply wells in the immediate vicinity of the equalization lagoon (albeit the plant's own wells) adds to this level of concern.

The wastewater treatment system was built during a time when there was much less concern over ground water contamination from in-ground wastewater ponds and lagoons. Consequently, many wastewater treatment systems were furnished with very generously sized lagoons, particularly where sufficient land was available.

Based on the nature of the wastewater streams at the plant, it is not at all obvious that such a large equalization lagoon is really needed. In fact, it seems somewhat contrary to good design to allow the relatively small effluent stream from the chrome reduction step to mix with the much larger volume of non-chrome wastewater streams and to then subject the total combined wastewater to precipitation and settling for the removal of chromium hydroxide. If the chrome containing wastewater were to be piped directly to the clarifier, the equalization basin would then be free of chrome containing wastewater and the potential for ground water contamination would be substantially reduced (provided that any settled chrome hydroxide sludge in the lagoon were also removed). Therefore, it would be worthwhile to explore the feasibility of this modification. Even beyond that, it would also be worthwhile to determine whether an equalization lagoon of the present size is really necessary and whether it could be replaced with a much smaller aboveground holding basin.

The same type of concern over ground water contamination is also valid for the sludge lagoon, perhaps even more so due to the larger inventory of chromium. For both lagoons, the actual environmental liability can only be determined by monitoring the shallow ground water in the vicinity of the lagoons.

In general, long-term environmental liability would be greatly reduced if both lagoons were taken out of service and closed in an environmentally secure manner. As will be discussed in the section of this report on hazardous waste, there are also a number of potentially serious regulatory issues stemming from the status of the wastewater treatment sludge under the hazardous waste regulations.

Management Issues

The wastewater treatment system appears to be reasonably well operated, and the plant appears to have been diligent in carrying out the various effluent sampling and reporting requirements. No management issues were identified in the area of wastewater.

3.0 Air Emissions

Regulatory Issues

1) Completeness of the Permitting Process

The plant currently has a single MDNR air permit covering the following designated "emission points":

001 - Boilers and other fuel burning equipment;

002 - Chrome Department ventilation system;

003 - Lime storage tank baghouse (at the wastewater treatment facility); and

004 - Brule incinerator (the trash incinerator).

The current permit (which expired December 1, 1988) contains no specific limitations for any of the above emission points.

In the initial permitting process, the plant had submitted an inventory of its air emission sources to the MDNR who then (after presumeably making a review of the individual sources) determined which ones were sufficiently significant to be regulated by inclusion into the permit. Conspicuous by their absence from the permit are all of the major solvent-containing emission sources at the plant. The largest of these is the painting operation which emits TCE and toluene. The plant also emits 1,1,1 trichloroethane from general maintenance operations. According to the plant`s SARA Title III Section 313 filing, which is based on actual material consumption, in 1988 the plant emitted to the atmosphere approximately 300,000 lbs. of TCE, 178,000 lbs. of 1,1,1 trichloroethane, and 14,300 lbs. of toluene. This represents a total solvent emission rate of roughly 245 tons per year - a very substantial amount by any criterion.

While the permit doesn`t even acknowledge the existence of the major solvent emission sources, it does include the relatively insignificant dust collector on the lime storage silo at the wastewater treatment facility. The most likely explanation for this apparant distortion is that the MDNR was operating on incomplete or inaccurate information at the time it wrote the permit. And as indicated earlier, there doesn`t appear to be anything sent to the MDNR in connection with the plant`s permit application that would make the MDNR aware of the magnitude of the plant`s solvent emissions.

Thus, there is a risk that the plant could be faulted for misleading the MDNR with respect to its air emissions (particularly if the MNDR air

people should happen to review the plant`s SARA 313 filing). The matter could be resolved by requesting an opportunity to review the plant`s total air emissions with the MDNR to ensure that all emission points that are significant enough to be permitted are indeed permitted.

2) Confirmation of Permit Extension

As indicated earlier, the plant`s current air permit expired on December 1, 1988. The plant had made a timely reapplication in May of 1988, but evidently the MDNR has not yet had time to act upon it. According to the plant, the MDNR has verbally informed the plant that it can continue operating under the expired permit until the new one is issued. It would be prudent to request that such an extension be put in writing.

3) Requirement for an "Emission Reduction Schedule"

There is a requirement in the Mississippi Air Pollution Control Regulations that existing facilities with actual total air contaminant emissions in excess of 0.25 tons per day have a "Commission approved emission reduction schedule which shall set forth preplanned abatement strategies in the event an air emergency episode does arise" (APC-S-2, Section 1.5).

Because the plant`s solvent emissions alone are well above 0.25 tons per day (actually, close to 1 ton per day based on 250 operating days per year), the plant is required to have an emission reduction schedule. It currently does not have one and is therefore not in compliance with this requirement.

4) Opacity Restrictions Pertinent to the Trash Incinerator

During the audit, the ERM team observed that the trash incinerator periodically discharged dense black smoke. Trash is fed into the incinerator manually, and the black smoke probably occurs when a fresh charge of waste has just been introduced into the incinerator thereby creating a transient oxygen-starved condition.

The plant should be aware that the Mississippi Air Pollution Control Regulations contain a general opacity limit of 2 on the Ringelmann Smoke Chart that is applicable to almost all emission sources (APC-S-1, Section 3). It is quite possible that the trash incinerator is in violation of this limit during those transient periods when black smoke is discharged.

Liability Issues

The 245 ton per year of solvent emissions pose some degree of potential environmental liability. It is quite possible that the plant is the largest single source of solvent emissions in the entire Grenada area. If that indeed is the case, then the plant could at some point become the focus of unwanted scrutiny. This possibility is not as unlikely as it may seem. Environmental activist groups have been using the emission rates appearing in the SARA 313 filings of industrial facilities to generate "public awareness" over the amount of pollutants being emitted in certain locales. They also have attempted to link local health problems to the largest sources of air emissions. From any perspective, it is not good to be the largest emitter.

Management Issues

1) Solvent Usage

The principal source of the 300,000 lbs. per year of TCE emissions is the mask washing step of the painting operation. Based on 250 operating days per year, this emission rate translates into the evaporation of over two 55-gallon drums of TCE per day. Because the operation is not very large physically, it is very difficult to envision how this much evaporation could be taking place. A thorough technical review of the mask washing operation might identify ways of substantially reducing the rate of TCE evaporation.

The 178,000 lbs. per year of 1,1,1 trichloroethane used in maintenance operations is also difficult to understand because it translates into an average evaporation rate of well over one 55-gallon drum per day. A study of the way in which the solvent is used might identify areas where solvent usage could be significantly reduced without hampering maintenance activities. Along the same lines, it is not clear why a halogenated solvent absolutely has to be used for general maintenance purposes. Apart from work on sensitive electrical equipment, many maintenance departments of large industrial facilities have been able to successfully limit their solvent usage to mineral spirits only.

2) Restrictions on Material Fed to the Trash Incinerator

The trash incinerator is a rather rudimentary device that is really intended only for the burning of paper and wood scrap. Our understanding is that the incinerator operator is only supposed to burn only those types of materials. Yet, when entering the plant on the second day of the audit, a distinct odor of burning plastic was detected. Though we cannot be certain, it is highly likely that the

source of the odor was the trash incinerator. In general, plastic can be difficult to burn, and the incomplete combustion of certain plastics can generate toxic by-products. Consequently, the plant should periodically check the waste sent to the incinerator to ensure that plastic objects are excluded.

4.0 Hazardous Waste

Regulatory Issues

1) Validity of the Hazardous Waste Delisting Petition

Under the hazardous waste regulations, wastewater treatment sludge from most electroplating operations (and including those from chrome plating) is considered to be a "listed" hazardous waste and is assigned the EPA Hazardous Waste Number F006. All such sludges are considered to be hazardous waste unless the generator can demonstrate that his specific sludge has properties that allow it to be safely managed as a non-hazardous waste. To make such a demonstration, the generator must go through a formal delisting process and file a delisting petition with the applicable regulatory agency. While many states could grant delistings in the past, only the USEPA and the state of Alabama currently have authority to grant delistings. Mississippi lost its delisting authority in November of 1984. Many previouly granted delistings are now open to review and approval by the USEPA.

While under the ownership of Rockwell International, the plant made a delisting petition to the MDNR in June of 1982. On December 22, 1982 the MDNR notified the plant that its delisting petition was approved. Accordingly, the plant has been operating under the belief that all of its wastewater treatment sludge is not a hazardous waste and need not be managed accordingly. However, there appears to be good reason to be concerned about whether the state-approved 1982 delisting petition is the final word as to whether the plant`s wastewater treatment sludge is or is not a hazardous waste. These concerns are briefly discussed below:

a) Different Delisting Criteria - The 1982 delisiting petition was based on the simple assumption that if the sludge passed the EP Toxicity test, then the sludge was not a hazardous waste. However, the USEPA has gotten much more sophisticated and now uses a formal set of procedures for evaluating the merits of delisting petitions. It is assumed that the waste will be placed into a landfill where leaching will result in toxic constituents migrating into the ground water. The analysis includes the use of several models that relate the quantity of waste generated and the concentration of leachable toxic constituents

to drinking water standards for those constituents. The models are used to arrive at an allowable "dilution rate". The dilution rate is then multiplied by the drinking water standard(s) for the constituent(s) of concern. For the delisting petition to be approved, the leachable toxic constituents must be below that number. The important point here is that a waste can pass the EP Toxicity test and still be considered unacceptable for being delisted. Presumeably, if the USEPA were to conduct a review of the 1982 delisting petition, the above type of analysis would be performed. Due to the relatively large volume of wastewater treatment sludge generated, limits far more stringent than the EP Toxicity limits would most likely be applied.

b) Exclusion of the Wastewater Holding Lagoon Sludge - The 1982 delisting petition only addressed the sludge that is disposed into the sludge lagoon. The sludge that accumulates on the bottom of the wastewater holding lagoon was completely excluded from consideration.

c) Uncertainty Over USEPA Review Status - The plant files available during the audit contained no correspondence between the plant, the state, or the USEPA subsequent to the granting of the 1982 delisting. After the audit, ERM checked a 1985-vintage EPA delisting data base. That information indicated that on January 30, 1984 the USEPA referred the plant`s petition (referred to as "Petition No. 422") back to Mississippi. The status of the petition at that time was that it was "awaiting review". Thus, while we have no information on what has transpired since 1984, it appears quite possible that the granting of the delisting petition in 1982 was not the last word on the whole matter. Should the 1982 delisting petition be found invalid, then serious regulatory difficulties would ensue. All of the wastewater treatment sludge in both the holding lagoon and the sludge lagoon would then be a hazardous waste, and the plant would need to apply for a permit as a hazardous waste storage facility. But in order to obtain such a permit, the lagoons would have to meet the design standards for hazardous waste impoundments. Those standards include the installation of a double liner, leak detection, and a ground water monitoring system. Thus, the plant would be faced with the prospect of having to retrofit double liners into two actively used lagoons that are an integral part of plant operations. The technical and economic feasibility of such an undertaking is questionable.

With so much at stake on the status of the plant`s delisting petition, it would seem worthwhile to engage an environmental attorney to analyze the legal aspects of the matter and help prepare a strategy for dealing with the possible contingencies stemming from an invalidation of the delisting petition.

Liability Issues

1) Closure of the Lagoons as Hazardous Waste Facilities

If the delisting petition is considered invalid, and if it is not feasible to retrofit double liners into the lagoons, then it may be necessary to close the lagoons as hazardous waste facilities. Such a closure would have to be done in accordance with an approved formal closure plan. The closure could very well entail extensive remediation work in the event that contaminants were found to be migrating from either or both of the lagoons. A worst-case scenario would be one in which all of the sludge would have to be removed from the lagoons and disposed at great expense in an off-site hazardous waste landfill. At a minimum, the lagoons would have to be provided with some form of engineered cap and an extensive ground water monitoring network installed. Closure in any form would be an expensive proposition.

Management Issues

1) Inaccurate Generator Survey Questionnaire

In terms of the actual handling of waste, the plant`s hazardous waste management practices appear to be good. However, it is worth briefly mentioning an example in which more attention could have been paid to accurate and consistent reporting of information to regulatory agencies. In 1988 the plant responded to a lengthy EPA National Survey of Hazardous Waste Generators. A review of the completed questionnaire revealed a number of omissions, inaccuracies, and inconsistencies. The most serious of these could give the impression to someone reviewing the questionnaire that the plant was managing electroplating waste as a hazardous waste, when indeed the plant is operating on the basis that that waste has been delisted.

5.0 Non-Hazardous Waste

Regulatory Issues

No specific regulatory issues were identified in the area of non-hazardous waste management.

Liability Issues

1) Testing of Waste Oil

The plant generates waste oil mainly consisting of hydraulic oil mixed with a lesser amount of draw compound. The waste oil is stored in both bulk and drum form before being periodically removed by a waste

oil hauler. According to the plant, the waste oil eventually goes to a waste oil recycler, though no information was available during the audit as to exactly how the waste oil is "recycled".

In general, it is the plant`s responsibilty to ensure that it`s waste oil is properly characterized, because there are potential liability issues associated with almost any outside use of recycled or recovered waste material. For example, if the waste oil is used in some form of fuel blending program, then depending on how and where the blended oil is burned as a fuel, restrictions may pertain regarding the halogen content of the oil. It is not clear that the overall halogen content of the waste oil sent off-site has been determined, nor is it clear that the waste oil hauler is aware that the draw compound has a chlorinated paraffin component. Therefore, for the plant`s own protection it would be advisable to periodically analyze the oil for total halogens and to provide the waste oil hauler (in writing) with that data. Another reason why this is advisable is that the plant uses considerable amounts of halogenated solvents, and the possibilty always exists that some halogenated solvents could become inadvertently mixed in with the waste oil.

Letter to waste oil hauler clearly state that chlorinated paraffin exists but is not a listed material

possible?

Management Issues

1) Evaluation of Waste Contractors

As indicated above, little seems to be known about what is specifically done with the waste oil. It would be a good environmental management practice to conduct periodic evaluations of the contractors that accept the plant`s waste oil and other non-hazardous waste. The evaluation should be based on an actual visit to the facility(s) where the waste is processed. It should also include an inquiry into the regulatory background of the contractor to determine if he currently is or has been involved in regulatory difficulties. Of particular importance in this regard is whether the contractor is or has been the subject of a site investigation aimed at determining whether remedial action against the facility is warranted.

6.0 Underground Storage Tanks

Regulatory Issues

The plant formerly had five undergound storage tanks located on site. One tank was removed in 1986, and the remaining four were removed in 1988. The plant had made the requisite notifications regarding the tanks and their removal. Therefore, no regulatory issues were identified in the area of underground storage tanks.

Liability Issues

1) Questionable Tank Integrity

The material stored in the five former underground storage tanks included gasoline, diesel fuel, hydraulic oil, and toluene. The total combined capacity of the five tanks was 23,000 gallons. Four of the five tanks were twenty years old or older at the time of their removal.

According to the plant, some of the tanks visually appeared to be in poor condition at the time of their removal. Also, the plant evidently has had difficulty in matching the quantity of material delivered with the estimated amount of material used. However, at the time of the tank removal, no soil samples were taken from the excavations to check for soil contamination. For these reasons, coupled with the old age of four of the tanks, a fairly high level of concern appears to be justified over the possibility of tank leakage and resultant soil and potential ground water contamination. Future potential liability could be avoided by conducting soil sampling and ground water monitoring in the vicinity of the more suspect of the former tank locations and then remediate those areas where contamination is found.

Management Issues

No management issues were identified in the area of underground storage tanks.

7.0 CERCLA (Re: Past Releases and Disposal Practices)

Regulatory Issues

The plant has made all the requisite CERCLA filings and has cooperated with on-going EPA efforts regarding CERCLA related investigations. Also, there have been no CERCLA reportable releases on the plant site. Therefore, no regulatory issues were identified in the area of CERCLA releases or past disposal practices.

Liability Issues

1) CERCLIS Status

The plant currently has two sites included on the EPA CERCLIS (Comprehensive Environmental Response Compensation and Liability Information System) list. These include the inactive on-site landfill located on the plant property and an offsite landfill located several miles away off Route 7 in Grenada. The latter is referred to by

EPA as "Rockwell International Site No. 2". The on-site landfill is believed to have been used from 1961 to 1967, and the off-site landfill from 1967 to 1981. The off-site landfill was not owned by the plant and also received waste from other parties during the time it was in use. Presumeably, these sites were placed on the CERCLIS list as a result of the plant`s 1981 CERCLA 103(c) filing identifying past sites where hazardous wastes had been managed.

During January 30 and February 1, 1989 a CERCLA site investigation was conducted on the on-site landfill by the NUS Corporation acting as contractor to the EPA. According to the plant, the NUS site investigation team took soil samples in and around the landfill, surface water samples in the general vicinity of the landfill (which lies within a swampy area), and water samples from the plant`s on-site production wells.

Although the plant is not aware of NUS having conducted any sampling at the off-site landfill, NUS probably either has already investigated the off-site landfill or plans to do so in the near future, because EPA also notified Rockwell International of its intent to do a site investigation for "Site No. 2" on the same date that the plant was notified regarding the investigation of the on-site landfill.

The CERCLA investigation of the on-site landfill represents significant potential liability for the plant. Should the CERCLA investigation conclude that the on-site landfill represents a sufficiently significant hazard to human health or the environment (as determined in part by the Hazard Ranking System), then the on-site landfill could be placed on the National Priority List as a site in serious need of remediation. Furthermore, should the investigation of the on-site landfill determine that contamination from the landfill has migrated, there could be additional site investigations which eventually could encompass the sludge lagoon and possibly the wastewater holding lagoon.

The plant maintains that the off-site landfill (Site No. 2) was never used by the plant subsequent to the 1985 acquistion of the plant from Rockwell International. If that indeed is the case, then it would appear that Rockwell rather than Textron would be liable for any necessary remediation. However, the plant could conceivably be dragged into the matter if it should be proved or alleged that the plant did send waste to the landfill after the 1985 acquisition.

Management Issues

1) Tracking the NUS Site Investigation

The EPA currently has many CERCLA site investigations in

progress. There is a formal set of procedures for the way in which subcontractors such as NUS report their results to EPA and the manner in which those results are reviewed, approved, and finally used to determine whether a site belongs on the National Priority List. Typically, the people doing the ranking of a site are not the same people who did the actual field investigation. Consequently, there is plenty of room for error, and a long period of time can often elapse between the time a site is first investigated and the time a final report is issued.

It is in Textron`s best interest to know as much about the status of the site investigation and to know about it as early as possible. That way, it can respond to interim findings or conclusions to which it may take exception. It is far easier to do this well before the final report is issued. To that end, it would be useful to contact NUS and/or the EPA project officer to check on the status of the investigation and to request copies of available results. It may be necessary to file a Freedom of Information Act request to obtain some of this information.

8.0 Community Right-to Know Requirements

Regulatory Issues

The plant has not had any releases of reportable quantities of SARA Title III Hazardous Substances or Extremely Hazardous Substances. It has also completed the requisite Hazardous Chemical Inventory Reporting (Section 312) and Toxic Chemical Release Reporting (Section 313). No regulatory issues were identified in the area of Community Right-to-Know requirements.

Liability Issues

1) Potential Implications of Release Reporting

As already alluded to in the section of this report on air emissions, the information provided in an industrial facility`s Section 313 Toxic Chemical Release Reporting is public information and can be used against a facility by environmental activist groups bent on "exposing" the serious polluters in a given area. Furthermore, such information can be used to cross-check air, water, or disposal permits to determine if all the releases are being accounted for. If this exercise were to be done for the plant, it would reveal that the plant has air emission sources that emit upwards of 250 tons/year of solvents that are not covered by specific permits. This situation might be very difficult to explain in a public forum and underscores the importance of being certain that the air permits issued by the MDNR are based on their full knowledge of <u>all</u> the plant`s air emissions.

Management Issues

1) Internal Review of Release Reporting

In light of the above discussion, it should be apparent that the Section 313 Toxic Chemical Release Reporting is not just a routine environmental paperwork exercise, but rather, a public statement about the nature and size of the plant`s environmental emissions. As such, it is important enough for careful internal review prior to issuance, particularly for consistency with all of the plant`s environmental permits. The basis for the estimates used to arrive at the various "releases" should be carefully documented and periodically reviewed.

9.0 Spill Prevention and Control

Regulatory Issues

1) Adequacy of the combined SPCC/RCRA Contingency Plan

Due to the quantity of oil stored on site, the plant is required to have a Spill Prevention Control and Countermeasure (SPCC) Plan. Also, as a full-size hazardous waste generator, the plant is also required to have a Contingency Plan applicable to its hazardous waste accumulation activities. As allowed by the hazardous waste regulations, the plant has elected to make the Contingency Plan an addendum to its existing SPCC plan. While this combined document satisfies the basic requirement for having an SPCC plan and a Contingency Plan, it has a number of shortcomings which might cause the document to be construed as inadequate. These are very briefly described below:

- There is virtually no discussion on actual spill pathways and what would specifically be done (i.e., procedures to be followed and equipment to be used) in the event of a spill.
- There is no list of emergency equipment and their locations.
- There is no description of what would specifically be done in the event of a fire or explosion.
- While the names and phone numbers of government agencies are listed, there is no discussion on notification and follow-up reporting procedures.
- There is no guidance with respect to the safety precautions to be observed when dealing with spills or releases.

In short, the combined document appears to provide little in the way of telling the operator on the spot specifically what to do in the event of an oil spill or a release of hazardous waste. While the above shortcomings are not actual non-compliances, they do make for a rather weak SPCC/Contingency Plan. Beyond that, the plant could actually be found in non-compliance by 1) not distributing the plan to all the required agencies, and 2) not having the SPCC plan certified by a registered professional engineer.

Liability Issues

1) Lack of Spill Containment for TCE and Waste Oil Storage Tanks

Neither the 5,000 gallon TCE storage tank nor the 10,000 gallon waste oil tank are furnished with spill containment diking. While these tanks are situated in a paved area (where drums of waste oil are also stored), the immediate area drains to a nearby stormwater catch basin that in turn drains to the wastewater holding pond. Thus, a spill resulting from a tank failure, or a spill occurring during tank loading or off-loading operations, would very rapidly flow into the wastewater holding pond.

If an oil spill did get into the pond, it would be very difficult to remediate. Because the wastewater holding pond and the downstream wastewater treatment system are maintained at an alkaline pH, oil would tend to become emulsified, with the result that much of the oil would probably pass right through the treatment system and be discharged to the creek. While some TCE might also become suspended and be eventually discharged to the creek, due to its high density, most of it would probably sink to the bottom of the pond and possibly begin to migrate into the underlying ground water. Remediating this type of situation could be very difficult and very expensive.

Overall, the potential liability asssociated with sudden releases to the environment could be greatly reduced by providing full spill containment for the TCE and waste oil holding tanks and for the drums of waste oil stored in the adjacent area.

2) Questionable Integrity of the Hazardous Waste Accumulation Area

The area in which drums of hazardous waste are accumulated pending removal and off-site disposal consists of an outdoor paved area surrounded by a concrete curb. The paving is non-existent in places and the curb is broken. Therefore, it is doubtful that a serious spill within the accumulation area would be totally contained. This current situation poses some potential liability because the material

normally stored is hazardous waste, and a spill onto the bare ground would constitute a release of hazardous waste to the environment.

Management Issues

1) Absence of Readily Accessible Spill Response Equipment

There is no spill response equipment (such as absorbent material, recovery drums, protective clothing, etc.) in the vicinity of the outdoor TCE and waste oil tanks. In light of the spill vulnerability discussed above, it it not at all clear that a quick response could be made in the event of a spill in this area.

10.0 Water Supply

Regulatory Issues

1) Monitoring Requirements for On-site Water Supply

All of the plant`s water supply, including its potable water, is obtained from a system of three on-site wells. These wells are annually sampled by the state Board of Health who analyzes the samples only for coliform count. A review of those results indicated that the samples were acceptable with respect to coliform. Some additional well water samples were taken several years ago by the Randall Division and tested for metals. That data was not available during the audit.

last sample taken inconclusive was not asked for

Under the Safe Drinking Water Act, the plant`s water supply qualifies as a "non-transient, non-community water system" (NTNCWS). As such, the water supplied by it must conform to a set of Maximum Contaminant Levels (MCLs) for a number of organic and inorganic constituents. Because the state only tests the samples for coliform count, and because the Randall division Sampling was performed several years ago, the plant has not demonstrated that its water supply conforms with all of the applicable MCLs. Therefore, the plant is under a regulatory obligation to periodically test its water supply for the applicable MCLs. It may be adviseable to contact the state with respect to the type and frequency of analyses to be performed.

2 years ago already done - waiting for response with "new requirement" applies lead also -0-

2) Demonstation of "Lead -Free" Status

There have been a number of recent regulatory developments requiring a facility to demonstrate that its water supply system is "lead-free" i.e., below the MCL for lead. This has not yet been done by the plant. It can be accomplished by an conducting in-plant, point of

use water sampling program and analyzing the samples for lead.

Liability Issues

There is some potential liability associated with the plant`s water supply wells being situated in close proximity to lagoons that contain chromium, other heavy metals, and possibly organic constiuents. Another potential source area of ground water contamination is the five former underground storage tanks which apparently leaked. Although the wells do not draw water from the shallow aquifer, there currrently is no information as to the degree that the deeper aquifer is isolated from the shallow aquifer. If that aquifer were to become contaminated from migration of contaminants from the lagoons or from the former underground storage tanks, the plant might have to secure an alternate potable water supply.

Management Issues

No management issues were identified in the area of water supply.

11.0 Ground Water

Regulatory Issues

At present, the plant is not involved in any ground water monitoring program. Nor is there any data available that can be used to determine whether the plant is creating a discharge to ground water (as in the case of a leaking lagoon that caused contaminants to migrate into the underlying aquifer). Therefore, no regulatory issues were identified specific to ground water at this time.

Liability Issues

As already indicated in the discussion on the NUS site investigation and the ramifactions of the delisting petition being invalidated, many of the concerns regarding potential liability have to do with the possibility of ground water contamination resulting from either the inactive on-site landfill, the lagoons and/or the former underground storage tanks if in fact such contamination were discovered, it might be necessary for the plant to implement a ground water remediation effort.

12.0 Management of Polychlorinated Biphenyls (PCBs)

Regulatory Issues

The plant has a number on PCB transformers and capacitors. It appears to be in compliance with the applicable requirements regarding labelling, inspection, and record keeping. Therefore, no regulatory issues were indentified in the area of PCB management.

Liability Issues

All of the plant`s PCB equipment is in well protected areas and would appear to pose little risk with respect to releases to the environment. Therefore, no liability issues were identified in this area.

Management Issues

No issues were identified with respect to the plant`s management of PCBs.

13.0 Management of Asbestos (Environmental only)

Regulatory Issues

In 1987, the plant conducted a major asbestos survey which resulted in the removal of some asbestos insulation. All of the removal work was done by an asbestos contractor. No regulatory issues were identified in this area.

Liability Issues

No liability issues were identified with the respect to the environmental aspects of the plants management of asbestos.

Management Issues

No management issues were identified in this area.

14.0 General Environmental Management

Overall, the plant staff appears to manage its day-to-day environmental activities in a competent and conscientious manner. Plant housekeeping was generally good.

We perceive that some improvements could be made in the area of record keeping and general environmental paperwork management.

In a larger sense, we think that the plant may need to develop a broader understanding of the federal regulatory requirements and the way the USEPA can insert itself into plant situations, particulary in the area of hazardous waste and CERCLA. Up till now, the plant`s contact with environmental regulatory agencies has largely been confined to the MDNR. State regulatory agencies, particularly those of the less industrialized states such as Mississippi, tend to regulate in a much more informal manner than the USEPA, which "does it by the book". The plant must be sensitive to this difference in approach.